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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/614,857 | 07/09/2003 | Akio Miyori | 0229-0761P | 8155 |

2292 7590 06/27/2007
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| EXAMINER |
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PIERRE LOUIS, ANDRE

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| ART UNIT | PAPER NUMBER |
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2123

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| NOTIFICATION DATE | DELIVERY MODE |
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06/27/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/614,857

Applicant(s)

MIYORI ET AL.

Examiner

Andre Pierre-Louis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. In view of the Appeal filed on 02/26/2007, PROSECUTION IS HEREBY REOPENED.

A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

 PAUL RODRIGUEZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

2. Claims 1-8 are presented for examination.

Specification

3. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Content of Specification

- (a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.

- (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.
- (c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.
- (d) The Names Of The Parties To A Joint Research Agreement: See 37 CFR 1.71(g).
- (e) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.

Or alternatively, Reference to a "Microfiche Appendix": See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.

- (f) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:
 - (1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."
 - (2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."
- (g) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.

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- (h) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.
- (i) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.
- (j) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet or electronic page (37 CFR 1.52(b)(3)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).
- (k) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).
- (l) Sequence Listing: See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

3.1 The disclosure is objected to because of the following informalities: the layout of the specification is not in the order set forth above. Applicant needs to follow the guideline for submitting a replacement and/or substitute specification as set for in the MPEP (see MPEP 608.01).

Response to Arguments

4. Applicant's arguments filed 02/26/2006 have been fully considered but they are moot in view of the new ground of rejection. However, the Examiner brings in a secondary reference for further support of the rejection of the claims, applicants' argument with regards to the independent claims that *"within the Seta patent there is no discussion or suggestion of the use of a snow model in which the snow of the model exhibits a volume change and a mass density change in response to compression, much less a snow model in which the snow of the model can maintain a volume change and a mass density change after the compression is removed"*, is acknowledged. However, the claims as presented does not required *the use of a snow model in which the snow of the model exhibits a volume change and a mass density change in response to compression, much less a snow model in which the snow of the model can maintain a volume change and a mass density change after the compression is removed*. Applicant's claims merely recited that the snow model being capable of presenting and maintaining the volume change and mass density change and does not present and maintain any volume change nor a mass density change of any kind. Nevertheless, the secondary reference is brought in for further support in the rejection and to cover some of the dependent claims argued by the Applicants. Thus, a clear mapping of the reference cited to the instant claims is shown above and fully supports the Examiner's position in the rejection of the claims.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5.0 Claims 1-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Seta (U.S. Patent No. 6,430,993), in view of Shiraishi et al. (U.S. Patent No. 6,725,168).

5.1 In considering the independent claims 1 and 8, Seta substantially teaches a method of simulating a tire on snow, in particular the steps of making a model of the tire made up of numerically analyzable elements (*see fig.2 (100,102); col.3 line 54-col.5 line 65*); setting of conditions for rolling the tire model and contacting the tire model with the snow model (*fig.2 (108); col.1 line 6-col.6 line 63*); computing of deformation of the tire model (*see fig.2 (110); col.6 line 21-22*); repeatedly carrying out steps c-e at minute time intervals (*col.8 lines 51-55*) to obtain at least one of the following data: a force produced on the tire model in the back and forth direction (*fig.18*); and mass density, pressure, stress, speed and contact force of the snow model, and outputting said at least one of the data (*fig.2 (122), col.49 lines 18-65 and col.19 line 59-col.20 line 67*). Seta teaches a fluid model made up of numerically analyzable elements containing at least one of water and snow and computing deformation of the fluid model, which contains snow (*col.5 line 44-col.6 line 23*); however, he does not expressly teaches making a

model of the snow made up of numerically analyzable elements *being capable* of presenting its volume change and mass density change caused by compression and *being capable* of maintaining a volume change and mass density change after the compression is removed; and computing of deformation of the snow model, as claimed by the applicant. Shiraishi et al. substantially teaches making a model of the snow made up of numerically analyzable elements *being capable* of presenting its volume change and mass density change caused by compression and *being capable* of maintaining a volume change and mass density change after the compression is removed (*see col.11 lines 14-63*); and computing of deformation of the snow model (*col.11 lines 14-63*). Shiraishi et al. further teaches repeating the claimed steps until a target model is achieved and outputting at least one of the data (*fig.1 col.16 lines 13-21 and col.11 lines 14-63*). Seta and Shiraishi et al. are analogous art because they are from the same of endeavor and that the simulation method teaches by Shiraishi et al. is similar to that of Seta. Therefore it would have been obvious to one ordinary skilled in the art at the time of the applicant's invention to combine the tire performance simulation method of Shiraishi et al. with the tire performance estimating method of Seta because Shiraishi et al. teaches the improvement of efficiency and cost reduction (*col.16 line 17-21*).

5.2 With regards to claim 2, the combined teachings of Seta and Shiraishi et al. substantially teach the steps of defining the tire model as being rotatable around its rotational axis and being movable only in the vertical direction in relation to a coordinate system (*see Shiraishi et al. fig.1, col.12 line 65-col.13 line 24; also see Seta fig.1 (102), 10, 35, col.5 line 44-col.6 line 23*); and defining the snow model as being immovable in relation to said coordinate system (*see Shiraishi et al. col.11 lines 14-63; also see Seta fig.2,8, col.5 line 44-col.6 line 23*);

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and said conditions including a torque applied to the tire (*See Shiraishi et al. col.2 line 66-col.3 line 8*).

5.3 As per claim 3, the combined teachings of Seta and Shiraishi et al. substantially teach the steps of defining the snow model as being immovable in relation to a coordinate system (*see Shiraishi et al. col.11 lines 14-63; also see Seta fig.2, 8, col.5 line 44-col.6 line 23*); defining the tire model as being rotatable around its rotational axis (*see Shiraishi et al. fig.1, col.12 line 65-col.13 line 24; also see Seta fig.1 (102), 10, 35, col.5 line 44-col.6 line 23*); and defining a model of an elastic body of which one end is fixed in relation to the coordinate system and the other end is connected to the rotational axis (*See Shiraishi et al. col.17 line 59-col.18 line 3*), and said conditions including a torque applied to the rotational axis of the tire (*See Shiraishi et al. col.2 line 66-col.3 line 8*).

5.4 Regarding claim 4, the combined teachings of Seta and Shiraishi et al. substantially teach that the tire model is of a halved tire on one side of the tire equator (*see Seta fig.4-5, 17,32-34, col.39 line 23-67*), *also see Shiraishi et al. fig.2*).

5.5 With regards to claim 5, the combined teachings of Seta and Shiraishi et al. substantially teach that said outputting includes outputting one of the data by visualizing the distribution thereof in gray scale or changing color (*see Seta fig.32-34, 67, also see Shiraishi et al. fig.2, col.10 line 11-26 and col.12 line 40-43*).

5.6 As per claim 6, the combined teachings of Seta and Shiraishi et al. substantially teach that said outputting includes outputting one of the data relating to the snow model by visualizing the distribution thereof in gray scale or changing color and overlapping a view of the

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snow model (*see Seta fig.32-34, see Shiraishi et al. fig.2, col.10 line 11-26 and col.12 line 40-43*).

5.7 Regarding claim 7, the combined teachings of Seta and Shiraishi et al. substantially teach the step of visualizing and outputting specific elements which have data included in a predetermined specific range (*see Seta col.21 lines 15-27*).

Conclusion

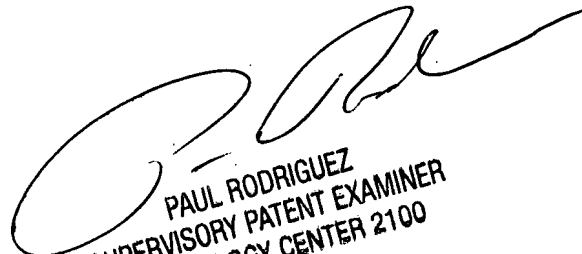
6. Claims 1-8 are rejected and **THIS ACTION IS Non-FINAL**. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre Pierre-Louis whose telephone number is 571-272-8636. The examiner can normally be reached on Mon-Fri, 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul L. Rodriguez can be reached on 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

June 17, 2007

APL



PAUL RODRIGUEZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100